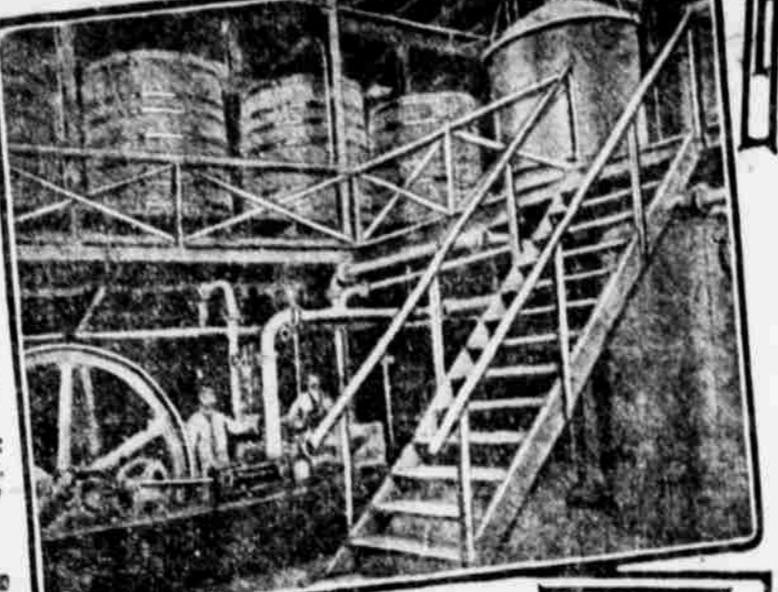


HARDEST OF ALL WOODS

THE WO of the greatest industries in the world are railway building and the preparation of hides and skins into leather. For the former the sleepers on which the rails are laid are essential and costly factors; for the latter nothing can take the place of some vegetable extract which is the tanning substance of the trade. Sleepers can be made of glass and metal, but these do not give the satisfaction of those made of wood. The oak and the hemlock have for ages supplied tannin by which leather is cured. In fact, the very word tann implies by its derivation its relation to the oak, by which name the tree was called in old Breton language. Railway sleepers have been made from the oak, but the expense grows higher year by year. No wonder, therefore, that the earth is scoured for trees to furnish either the one or the other of the substances, and no wonder also that manufacturers and builders hailed with delight the announcement a few years ago of the availability for both purposes of the South American tree called "Quebracho."

Quebracho is a contraction of the colloquial Spanish and Portuguese term quebracho-hacha, originally applied to many trees in Latin America. It means "ax breaker," and the character is implied in this meaning. The wood is hard, fine grained, and tough and has been used by the natives for ages in their primitive construction work. Of recent years, however, quebracho is restricted in the arts and industries to a particular tree found only in South America, and even here only within broad limits of the drainage basin of the River Parana. In Cuba there is a "quebracho," so-called locally, which is a member of the Copaliba family. In Chile a quebracho is rather of the Cassia family, and probably in other parts of Latin America the name is indiscriminately given to any hard wood that has tested the metal of the native's ax. No such indefinite use of the word, however, can be permitted today, because the tree of



A SAWMILL BETWEEN "THE CHACO" AND CIVILIZATION

The South American Chaco has become so commercially important that it must be understood to signify only that one tree and nothing else.

The genuine quebracho tree is found in Brazil, Paraguay, and the Argentine Republic. There are two important varieties and a third has been distinguished, although it has no great significance botanically or value commercially. Locally and in the trade the names given are Quebracho Colorado (red) and Quebracho Blanco (white). Quebracho Colorado has the scientific designation of *Loxopterygium lorentzii*, and belongs to the order of Anacardiaceae. This is the particular tree from which both the sleepers and the better quality of tanning extract are derived. The other, Quebracho Blanco, is neither so straight nor so serviceable as the red variety, but is nevertheless of definite commercial value, as it furnishes some tanning extract and the logs can be used for fence posts and axles. From it is taken also a drug extensively used for bronchial diseases; in fact, as a plant it was studied for this purpose long before its other advantages were exploited. The scientific name is *Aspidosperma quebracho*.

Railways must have sleepers on which to lay their rails. In some instances wooden ones are imported at great expense, or substitutes therefor are used if climatic conditions are favorable. As a rule, however, it is preferred to take supplies from native timber whenever procurable. This was the case in the Argentine Republic when railway building away from the coast had begun, and no more fitting wood could be discovered than that recommended by the natives, both by the name and by the experience of those who had used it. The quebracho wood proved by far the most serviceable for sleepers on South American railways, and its reputation grew so steadily that today many miles of European rails are supported by sleepers brought from the River Plate.

In one respect quebracho resembles rather mahogany than oak or pine. The trees do not grow in clumps or groves, but are dispersed through the forests and the less dense woods, singly or in groups seldom more than four or five to the acre. The tree itself is tall, about two or three feet in diameter, and is crowned by a rather thin, oval, or V-shaped, mass of branches and leaves. The white quebracho is somewhat smaller than the red, and begins to branch lower to the ground, so that it is not hard to distinguish them from each other. The leaves are oval, or lance shaped, smooth, somewhat shining and leathery; they do not fall completely in the winter, but cling to the branches in company with the fruit. The tree seems to thrive best on a sandy soil, where the atmospheric moisture is not very great, but where abundant water is provided for the roots, either by dews or sufficient rain. It is neither a mountain nor a river growth, but lives best in the sub-tropical stretches between water courses. Although the age of the tree has been given as measured by hundreds of years, it is well enough established that at ten years from planting the first small shrubs are big enough to use for posts. The future promises, therefore, an opportunity for the actual cultivation of quebracho, because, although savage inroads have been made into the supposedly inexhaustible forests of the Chaco, it is not too late to restrict the cutting of the tree, or even to adopt modern forestry methods of planting and conservation for the supply of coming generations. In fact, the Argentine Republic has already passed suitable laws in this direction, and it is more than probable that under the wise administration of that government there will be

developed an arboricultural industry to proceed hand in hand with the preparation of quebracho posts for fences and construction work, sleepers for railways, and of tanning extract, the three industries for which this unique tree is at present utilized.

"Rollizos" is the Spanish word commonly employed in the trade for the rough and untrimmed logs (which the word means), from which only the bark has been removed. They are still supplied by smaller camps from dwarfed undergrowth not great enough for other purposes than posts, beams, cabin pillars, or cart axles. When the forest was first invaded these logs were the only product brought out of it, and the stories told of the primitive methods adopted by the natives for transport carry one back before the days of steam and machinery. A popular way of loading the logs was to lay them on the ground on ropes; then the animals were unharnessed and the cart was tilted bodily upside down over the logs; those were then made fast to the body of the cart, after which maneuver it was brought back to its normal position. Of course only two-wheeled carts were used. As soon as modern methods were introduced, and better carts or wagons became known, these primitive and cumbersome habits disappeared, although in the far interior even today rollizos are still brought to market in this manner. "Durmientes," according to the Spanish, or sleepers, in the English idiom, are probably the most important product of the quebracho of the Argentine Republic.

The industry of making sleepers has assumed huge proportions. The difficulties of former days have been largely overcome by the introduction of modern machinery, especially saws, and some of the mills many miles distant from any main railway are equipped and organized in a manner which would reflect credit on any similar plant in the United States. Special saws are needed to penetrate the wood, but they are furnished from the factories of England, France, and America. This mill business is carried on by many companies, although the tendency is to concentrate the management into fewer but larger organizations. One company owns a tract of land of about 4,000,000 acres, and is prepared to cut timber, fashion it into logs and sleepers, prepare tanning extract, and utilize every other resource which the land provides. Another company can turn out 20,000 to 30,000 sleepers a week. This number, however, can by no means meet the steady demand for railway building which is characteristic of this portion of South America. Sleepers are laid at about an interval of two feet from center to center. Assuming, therefore, only 2,000 sleepers for every mile, it will be seen that 30,000 are enough for only 15 miles. A year's supply at fullest capacity will consequently build only 750 miles of railway. But the Argentine Republic, Uruguay, Chile and Bolivia, all contiguous to the Chaco, are constructing more than this mileage, so that it is easy to see that every sleeper turned out from modern mills can at once find a local market. These sleepers are now finished at the mill, and the mill is situated at the spot in the forest itself most convenient for carrying on the process.

Quebracho extract prepared for tanning skins

and hides into leather is, however, the most serviceable product of the tree. All the timber companies are adjusting their plants so as to utilize the wood, either in its entire output, or in that portion not reserved for posts and sleepers, for this extract. In Paraguay and areas in the Chaco remote from good roads, so that the cost of supplying timber is excessive, every particle of the wood is turned into extract, because the demand is usually in advance of the supply, and it is therefore more profitable to manufacture the more concentrated article, which can be easier and more economically carried to market.

One feature of quebracho, in which it is superior to other sources of supply, is that the bark, the sapwood, and the whole of the central part of the tree produce the extract in considerable quantities. The bark contains 6 to 8 per cent. of tannin, the sap 3 to 5 per cent., and the heart 20 to 25 per cent. As the heart represents two-thirds and often three-fourths of the total quantity of wood, the amount of tannin in the quebracho Colorado is seen to be considerable. It is merely a chemical question whether this tanning material is equal or inferior to that from the oak, but later methods of preparation point to a full justification of the claim that the leather from quebracho extract grades up to that resulting from any other tanning substance. So serviceable is it, however, that since its discovery, the tanning industry of the Argentine Republic has made noticeable advance, because, with both hides and extract as great natural products of the country, the government is making every effort to foster the leather industry within its own border.

"Quebracho extract," as it is called in the trade is easily manufactured when the machinery is once installed. All the wood is passed through a machine that cuts it into shavings or the smallest possible chips. It is then collected into immense kettles, in which it is treated by chemical processes until all the tannin is removed; after this the fluid preparation is reduced by evaporation to a thick, jelly-like mass, which is poured into sacks, where it is finally dried into the substance sold in commerce.

The difficulty of gathering the raw material far outweighs the preparation of the finished article, especially as the extract is no longer to be considered a by-product, but is coming to have more importance and value than posts and sleepers. In Paraguay particularly, where all the wood is utilized for extract, the hardest part of the business lies in gathering wood for the factory. The trees are cut in the heart of the virgin forest and hauled by ox teams to the nearest clearing. Only native Indians have proven themselves suitable for the work, as they are thoroughly acclimated, understand the wilderness, and can withstand the plague of insects which make life at night miserable for the foreigner; and exposure for nights as well as days is unavoidable, because the cutting stations are usually remote from any settlement.

In 1895 the first real exportation of quebracho extract from the River Plate was recorded. The increase has been rapid—from 400 tons in the first year to 9,000 tons in 1902, 120,534 tons in the next five years, and 28,195 tons in 1907. Of this quantity the United States received 17,733 tons, or almost 65 per cent.

SHORT STATE ITEMS

MISSOURI PEACH CROP SHORT.

In Southern Part of State the Fruit Will Be Plentiful.

Columbia.—Taking the state as a whole, the Missouri peach crop will be short, but, so far as the city markets and the surrounding states are concerned, Missouri has a full crop. This statement was made by W. L. Howard, secretary of the state board of horticulture.

In many parts of the state the crop was damaged by early frosts, but in a small area in the south, near the Arkansas line, the prospect now is for a 100 per cent crop. It is from this small area that all the peaches are shipped from Missouri.

The crop is not an absolute certainty yet. There is danger from rot at any time. The recent rains probably will cause rot to start where the trees have not been sprayed, but where spraying has been done rot is not expected to do much damage.

The peaches from this south section are not marketed in Missouri, better markets being found in Chicago and northern cities. The few that are eaten in Missouri probably are sent back from Chicago.

Unless the rot attacks the orchards about 100 carloads will be shipped from south Missouri. Shipments will begin about August 1.

353 KILLED IN MISSOURI.

4,536 Persons Injured by Public Steam Carriers During Year.

Jefferson City.—Railroads operating in Missouri, according to the annual report of the state railroad commission, for the year ending June 30, 1909 killed 353 persons and injured 4,536.

This is a heavier casualty than for 1908, when 223 persons were killed and 3,440 injured as the result of railroad accidents.

The passenger mortality was comparatively slight. All the railroads killed but 25 passengers. Of the other persons killed 125 were employees and 153 were other than passengers and employees.

This covers those killed at grade crossings, persons killed while beating their way, and those run down while on the railroad rights of way.

Of the total number of persons injured 120 were passengers, 3,192 were employees and the remaining 809 were neither.

WILL BANISH BAD EGGS.

State Inspectors Ordered to Rigidly Enforce Law Against Dealers.

Columbia.—Placards warning dealers and farmers against selling or offering for sale tainted or rotten eggs are being sent out by the food and drug inspection department of Missouri. The placard notifies inspectors of the department and police officers to enforce the law against disposing of bad eggs.

A letter to egg dealers, accompanying the placards, says, in part: "The sale or offering for sale of eggs not fit for food is not only unlawful, but their entry into the channels of trade has the effect of reducing the price of the Missouri product below the current prices of the market, the loss of which is, of course, borne by the producer and dealer. It is to your advantage, therefore, to use the greatest care in culling out all eggs unfit for food."

JOSEPHINE SETS NEW RECORD.

Missouri Prize Cow Smashes World's Milk Data.

Columbia.—With a margin of 150 gallons or 1,204 pounds of milk, Missouri Chief Josephine, the Holstein dairy cow, owned by the University of Missouri, smashed another world's record, taking it away from Colantha Fourth's Johanna, a Holland dairy cow owned by J. W. Gillett of Rosendale, Wis. Johanna's record for six months, figured out 15,541 pounds of milk, while Josephine's total for the same period is 16,744 pounds. Johanna's best single month during her year's test was 2,783 pounds, against Josephine's high mark for one month of 2,950 pounds.

Lincoln County Crops Good.

Elisberry.—The oat crop of Lincoln county is the best, so state the oldest farmers, that they have ever known and variously estimate it to run from 50 to 100 bushels to the acre. The corn crop also is in fine condition.

Fulton Liquor Sales Cease.

Fulton.—Quiet reigns on "Battle Row," which has been the scene of police raids. The apparent temporary cessation of the sale of intoxicant liquors is due to the fact that the special grand jury is again in session.

Mare Valued at \$5,000 Dies.

Columbia.—Lady Arrogance, a driving mare that won first prize in the harness ring at the Boone county fair last year, and valued at \$5,000, is dead. The mare was owned by Austin Bradford of Columbia.

Is Appointed Deputy Marshal.

Cape Girardeau.—United States Marshal Edward F. Regenhart appointed E. E. Whitworth of Papay bluff deputy for the southwest division of the Eastern district. He will be sworn into office August 1.

MORE PINKHAM CURES

Added to the Long List due to This Famous Remedy.

Oronogo, Mo.—"I was simply a nervous wreck. I could not walk across the floor without my heart fluttering and I could not even receive a letter. Every month I had such a bearing down sensation, as if the lower parts would fall out. Lydia E. Pinkham's Vegetable Compound has done my nerves a great deal of good and has also relieved the bearing down. I recommended it to some friends and two of them have been greatly benefited by it."—Mrs. MAE MCKNIGHT, Oronogo, Mo.

Another Grateful Woman. St. Louis, Mo.—"I was bothered terribly with a female weakness and had backache, bearing down pains and pains in lower parts. I began taking Lydia E. Pinkham's Vegetable Compound regularly and used the Sanative Wash and now I have no more troubles that way."—Mrs. AL. HENSON, 5722 Prescott Ave., St. Louis, Mo.

Because your case is a difficult one, doctors having done you no good, do not continue to suffer without giving Lydia E. Pinkham's Vegetable Compound a trial. It surely has cured many cases of female ill, such as inflammation, ulceration, displacements, fibroid tumors, irregularities, periodic pains, backache, that bearing down feeling, indigestion, dizziness, and nervous prostration. It costs but a trifle to try it, and the result is worth millions to many suffering women.

Autoing and Optics.

"Is not auto driving terribly hard on the eyes?" we asked.

"Well, I guess not," replied the chauffeur, withering us with scorn. "Why, before I got to runnin' a car I was thinkin' o' gettin' specks, my eyesight was that poor I couldn't see the contribution box in church until it was so near past me it was too late to dig for any money. But I hadn't been runnin' that wagon two days till I could see a policeman's little finger stickin' out from behind a tree four miles away. I could even see which way a copper's eyeballs were turned if he was standin' in the shade three miles off. Hard on the eyes! Well, not much! It's the best medicine for weak eyes that was ever invented, I don't you forget it."

Incorruptible.

The lady of the house hesitated. "Are my answers all right?" she asked.

"Yes, madam," replied the census man.

"Didn't bother you a bit, did it?" "No, madam."

"Feel under some obligations to me, don't you?"

"Yes, madam."

"Then, perhaps you won't mind telling me how old the woman next door claims to be?"

"Good day, madam," said the census man.

Novelty.

"I thought you told me you had something original in this libretto," said the manager, scornfully. "Here at the very outset you have a lot of merry villagers singing. We are happy and gay!"

"You don't catch the idea at all," replied the poet, wearily. "The 'G' is soft. It should be pronounced 'happy and gay'."

HARD TO PLEASE

Regarding the Morning Cup.

"Oh how hard it was to part with coffee, but the continued trouble with constipation and belching was such that I finally brought myself to leave it off."

"Then the question was, what should we use for the morning drink? Tea was worse for us than coffee; chocolate and cocoa were soon tired of; milk was not liked very well, and hot water we could not endure."

"About two years ago we struck upon Postum and have never been without it since."

"We have seven children. Our baby now eighteen months old would not take milk, so we tried Postum and found she liked it and it agreed with her perfectly. She is today, and has been, one of the healthiest babies in the State."

"I use about two-thirds Postum and one-third milk and a teaspoon of sugar, and put it into her bottle. If you could have seen her eyes sparkle and hear her say 'good' today when I gave it to her, you would believe me that she likes it."

"If I was a mother of an infant's home, every child would be raised on Postum. Many of my friends say, 'You are looking so well!' I reply, 'I am well! I drink Postum. I have no more trouble with constipation, and know that I owe my good health to God and Postum.'"

"I am writing this letter because I want to tell you how much good Postum has done us, but if you knew how I shrink from publicity, you would not publish this letter, at least not over my name."

Read the little book, "The Road to Wellville," in pkgs. "There's a Reason." Ever read the above letter? A new one appears from time to time. They are genuine, true, and full of human interest.